SCOPE OF WORK

PORTS, WHARFS, TERMINALS & JETTIES

Victaulic®

APPLIED BENEFITS

THE VICTAULIC® DIFFERENCE

- COMPRESSED SCHEDULE
- REDUCED TOTAL INSTALLED COST
- INCREASED PRODUCTIVITY
- EASE AND SPEED OF INSTALLATION
- LESS DOWNTIME FOR MAINTENANCE
- REDUCED SKILLED LABOR
- IMPROVED SAFETY
- RISK MANAGEMENT
- VIRTUAL DESIGN AND CONSTRUCTION
- PREFABRICATION COMPATIBLE
- REDUCED MATERIAL HANDLING
- TOLERANCE FOR PIPE OFFSET
- VISUAL VERIFICATION

Modularization

Challenge: On-site installation risks and tolerance stack-ups

Solution: Modularization results in a significant reduction in field connections. Skids can be installed in a controlled environment. This reduces on-site risks including lost components or misalignment. Grooved couplings can accommodate minor misalignments due to the nature of the joint.

WHY IS THIS IMPORTANT?

Welded, flanged and threaded systems require in-field rework if the components aren't aligned perfectly. This could cost time and money to fix.

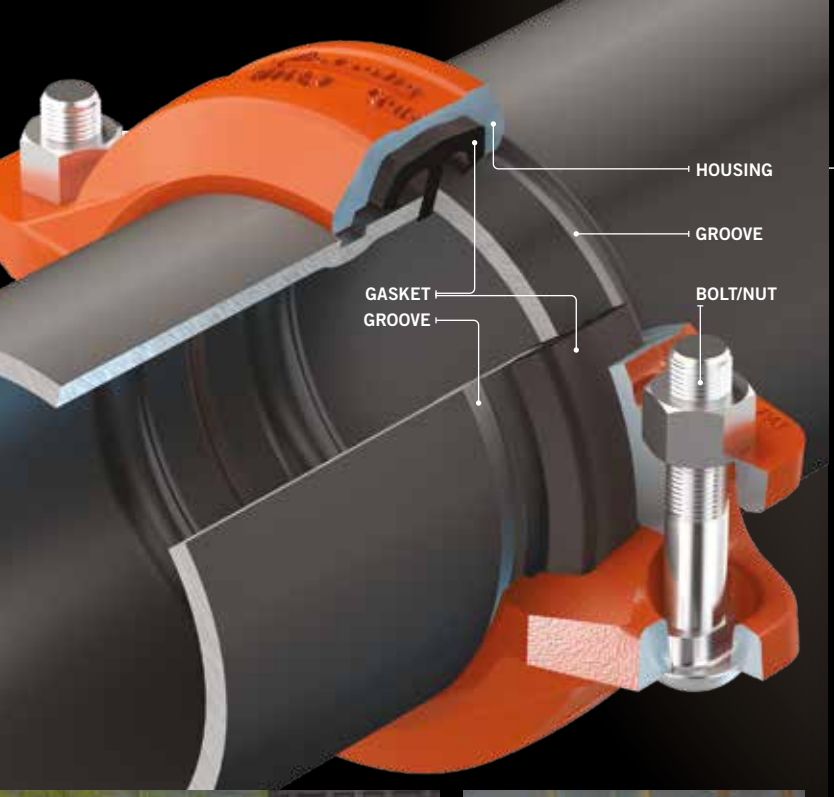
System Expansion and Maintenance

Challenge: Complicated rework process and/or space constraints

Solution: Grooved couplings provide a union at every joint.

WHY IS THIS IMPORTANT?

Having a grooved union at every joint allows for direction changes, system expansion and simplified maintenance. This also allows for quick dis-assembly and reassembly to get the system back online during critical outages.



Special Engineering and Operation Requirements

- ASME B31.1 Power Piping Code and ASME B31.9 Building Services Piping Code
- ANSI/AWWA standards for grooved and shouldered joints
- UL Listed/FM Approved
- NFPA 13
- Australian Standard WaterMark/NSF61 requirements for gaskets, valves and fittings in potable water
- Victaulic® systems:
  - Inherently accommodate thermal expansion and contraction within the joint
  - Accommodate and provide stress relief for seismic movement
  - Eliminate need for on-site X-ray examinations

Standard Grooved

75%

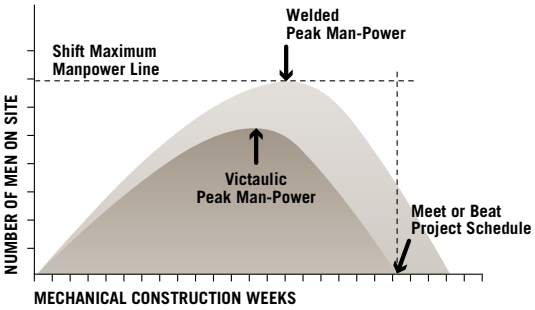
FEWER NUTS AND BOLTS

Flanged

Compressed Schedules

Challenge: Schedule overruns

Solution: With far fewer bolts and nuts than a flanged joint, installation time can be dramatically reduced. Welded systems require longer completion times and are somewhat weather dependent. The larger the diameter of piping the longer the installation.

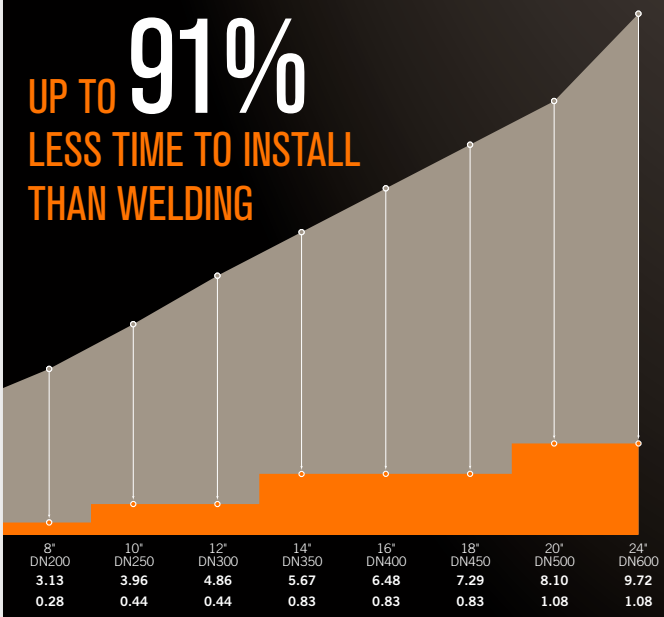


WHY IS THIS IMPORTANT?

Victaulic systems install faster and reduce downtime during retrofits and repairs, saving you money on labor and resource costs. *Victaulic* couplings ship with the appropriate nuts, bolts and gaskets, simplifying ordering and part location on a jobsite.

UP TO 91%

LESS TIME TO INSTALL THAN WELDING



Example:
24" | DN600 Joint
Weld Installation: 9.72 Man-hours
Victaulic Installation: 1.08 Man-hours

APPLICATIONS

Process Piping

	PORTS	TERMINALS	WHARFS	JETTIES
Chilled Water	●	●		
Compressed Air	●	●		
Condenser Water	●	●		
Cooling Tower	●	●		
Deionized Water	●	●		
Drains	●	●		
Fire Protection Deluge System	●	●	●	
Fire Protection Hydrants	●	●	●	●
Fire Protection Wet Sprinkler System	●	●	●	●
Foam	●	●		
Fuel Lines	●	●	●	
Hydronic Heating	●	●		
Instrument Air	●	●		
Oily Water	●	●		
Plant Utility	●	●		
Potable Water	●	●		
Process Water	●	●		
Service Water	●	●		
Vacuum Lines	●	●		
Wash Down Water	●	●	●	●
Waste Water	●	●		

WHETHER IT'S FOR ROUTINE PERIODIC INSPECTION, PHYSICAL EXPANSION OR UNSCHEDULED REPAIRS, VICTAULIC SYSTEMS PROVIDE FASTER AND SAFER SOLUTIONS DUE TO INTRINSIC DESIGN QUALITIES.

BENEFITS TO THE:

OWNER/ENGINEER

Reliability	The Victaulic® system for mechanically joining pipe has been used for nearly 100 years to simplify design, construction and maintenance of port facility piping systems.
Space Savings	*Victaulic* couplings require little space along the pipe as bolts can be assembled from either side.
Thermal Expansion and Contraction	*Victaulic* flexible grooved couplings utilize their linear movement and deflection capabilities to accommodate for pipe movement due to temperature changes.
Self-restraining	*Victaulic* couplings require no special restraints or tie-bars as with compression coupling and mechanical joints.
System Accessibility	With 75% fewer bolts and nuts than flanges, *Victaulic* couplings are easy to assemble and disassemble. This ease of disassembly allows you to have immediate access to your valves or system.

CONTRACTOR

Faster Assembly	Victaulic® couplings have up to 75% fewer bolts than flanges, compression couplings or mechanical joints, and is significantly faster than welding.
Lighter Weight	*Victaulic* couplings save up to 1/3 the weight of flanged joints – segmented design further eases handling, alignment and assembly.
Saves Space	*Victaulic* couplings require little space along the pipe as bolts can be assembled from either side of pipe.
Installation	*Victaulic* couplings can be rotated for ease of installation anywhere in the piping system.
Torque Rating	Most *Victaulic* couplings do not require torque. They can be installed and visually verified with pad-to-pad contact.

PROCESS/UTILITY WATER

Original Groove System (OGS)
Galvanized Carbon Steel

Grooved Stainless Steel System

WET/DELUGE SPRINKLER SYSTEMS

Original Groove System (OGS)
Galvanized Carbon Steel

FIRE PROTECTION HYDRANT LINES

Original Groove System (OGS)
Galvanized Carbon Steel

COMPRESSED & INSTRUMENT AIR

Vic-Press™ System for Schedule 10S Stainless Steel

PROCESS WATER

Advanced Groove System (AGS) Couplings and Fittings

PROVEN PERFORMANCE

TYPE OF FACILITY

PORT CONVEYOR & TRANSFER STATIONS

VICTAULIC® SOLUTIONS

MAN HOUR SAVINGS; UL/FM COMPLIANCE

APPLICATION

PROCESS WATER; FIRE PROTECTION

COMPLETION DATE

2008

As part of the new infrastructure at a major mining port facility, new conveyors were constructed to transfer iron ore from the train unloaders to the wharf area. The ore passes from the train unloaders via a conveyor to a transfer point, then to a traveling stacker for stock piling.

Victaulic was specified and installed on the fire protection system protecting the conveyor line. Using Victaulic reduced installation time by over 30% while also eliminating the fire hazards associated with welding.

When one of Australia's major iron ore producers established new operations in Port Hedland, the project consisted of a mine, rail infrastructure and the Herb Elliot Wharf. Victaulic piping systems were used to reduce man hours and onsite construction time due to the fast track construction schedule. The use of Victaulic products also provided expansion and contraction solutions to piping along the wharf through the use of Style 155 expansion joints which eliminated large expansion loops.

TYPE OF FACILITY

SHIP LOADING WHARF

VICTAULIC® SOLUTIONS

REDUCED INSTALLATION TIME
EXPANSION & CONTRACTION BENEFITS

APPLICATION

PROCESS WATER; FIRE PROTECTION

COMPLETION DATE

2008

PROVEN PERFORMANCE

TYPE OF FACILITY

REFINERY
CRUDE WHARF

VICTAULIC® SOLUTIONS

SAFETY
TOTAL INSTALLED COST SAVINGS
INSTALLATION TIME SAVINGS

APPLICATION

WATER; FOAM

COMPLETION DATE

2007

A major oil & gas refinery in Australia required an innovative piping solution for the water and foam fire protection systems at their crude wharf upgrade project in Brisbane. During the upgrade, the wharf remained operational, and it was critical to take into account all safety measures when working on the system. Therefore no sparks or flames could be generated on days when crude oil was being pumped.

In addition the project needed to be fast tracked in a cost efficient manner. Victaulic roll grooved flexible couplings, fittings, valves, and Vic-Press™ piping system were selected as they provided the best piping solution to meet the project requirements. The Victaulic systems provided significant savings in labour and installation time. Utilizing the Victaulic mechanical piping system, the team was able to continue working while crude oil was being pumped because the system is spark and flame free. The grooved system, having a union at every joint, also ensures easy maintenance during the operational life span of the facility should the need arise for further upgrade work.

When a major bulk import/export hub in Fremantle, Western Australia upgraded its jetty fire protection piping, Victaulic was chosen to overcome challenges including thermal movement and limited installation space.

The use of the Victaulic system – including Victaulic Style 155 expansion joints, QuickVic® Installation-Ready couplings, fittings and gate valves – resulted in direct time, labor and space saving benefits. The crew installed the upgraded system on scaffolding constructed on rafts under the wharf. With limited space to install, Victaulic Style 155 expansion joints allowed for all thermal movement accommodation within a streamlined component that has the same footprint as the rest of the piping system, eliminating the need for large expansion loops. Victaulic QuickVic couplings require no disassembly before installation, resulting in no loose parts that could've been dropped into the water below. Lastly, as a cold-formed joint, Victaulic components require no hot works.

TYPE OF FACILITY

BULK JETTY

VICTAULIC® SOLUTIONS

EXPANSION & CONTRACTION BENEFITS
INSTALLATION TIME SAVINGS
INSPECTION SERVICES
ENGINEERING DESIGN SERVICES

APPLICATION

FIRE PROTECTION

COMPLETION DATE

2018

U.S./World Headquarters

4901 Kesslersville Road
Easton, PA 18040 USA

victauliclocations.com

EMEAI

Prijkelstraat 36
9810 Nazareth, Belgium

Asia Pacific

Unit 808, Building B
Hongwell International Plaza
No.1602 West Zhongshan Road
Shanghai, China 200235

PORT-SOW 15709 REV A 08/2020